

Reactions of the Free Radicals in Solutions.
Communication 17. Effect of the Viscosity of
the Medium on the Primary Recombination of
Free Radicals

S/062/60/000/009/014/021
B073/B064

4 Soviet and 1 US.

ASSOCIATION: Institut vysokomolekulyarnykh sovedinaniy Akademii nauk SSSR
(Institute of Highmolecular Compounds of the Academy of
Sciences USSR)

SUBMITTED: April 7, 1959

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Card 3/3

YERUSALIMSKIY, B.L.

PART I BOOK EXPLANATION 307/983

International symposium on macromolecular chemistry. Moscow, 1960.
 Meshcheryakovskiy symposium on macromolecular chemistry. Moscow, 1960.
 1960 at Doklady i stenoformy. Sest'ya II. (International Symposium on Macromolecular Chemistry Held in Moscow, June 19-25, 1960; Papers and Summaries) Section II. [Moscow, Izdatel'stvo AN SSSR, 1960] 599 p. 5,500 copies printed.
 Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry
 Tech. Ed.: T.A. Prusakov.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high-molecular compounds.

CONTENTS: This is Section II of a multi-volume work containing papers on macromolecular chemistry. The papers in this volume treat mainly the kinetics of various polymerization reactions initiated by different catalysts or induced by radiation. Among the research techniques discussed are electron paramagnetic resonance spectroscopy and light-scattering interpolation. There are summaries in English, French and Russian. No personalities are mentioned. References follow each article.

Mikhail, R., and J. Eremovskiy (Moscow). On the Mechanism of the Polymerization Reaction of Stereoregular Polymers	302
Silmon, A., and O. Gyvas (Hungary). On the Kinetics of a Reaction on Zeigler Catalysts	310
Wichterle, O., M. Mark, and I. Tihomir (Czechoslovakia). Kinetics of the Polymerization of Isobutylenes on a Heterogeneous Catalyst	322
Bobak, V. (Czechoslovakia). Heterogeneous Catalysts for the Polymerization of Alpha Olefins	330
Yessid, E., I. Ashraf, B. Villa, and O. Hrdlik (Czechoslovakia). The Effect of Heavy Type Impurities on the Polymerization of Propylene. Catalyzed by the System Titanium Trichloride-Triethylaluminum	337
Polgonyi, P.A. (USSR). Study of the Factors Leading to the Degradation of Chain Structure During the Ionic Polymerization of Dienes	346
Yessid, E., V. P. Ponomarev, and A. A. Krasovskiy (USSR). Study of the Interaction of Organomagnesium Compounds with Salts of Heavy Metals and the Use of Organomagnesium Compounds and Their Complexes to Stimulate Polymerization	355
Bento, J., and E. del (Hungary). The Effect of Organic Ionomer Complexes of Some Metals of Variable Valence on the Kinetics of the Polymerization of Vinyl Compounds	366
Freder, S.F., M. E. Krasovskiy, I. V. Polubnyy, and M. Krasovskiy (USSR). Study of Some Details of the Mechanism of Polymerization Under the Action of Complex Catalysts	372
Fertner, V.H., S.F. Krasovskiy, M. Krasovskiy, and M.O. Gurevich (USSR). Stereospecificity and the Optical Properties of Polymers	378
Freder, S.F., M. E. Krasovskiy, and O. P. Polubnyy (USSR). The Microviscosity of Polymers and Methods of Study	388
Abtin, A.H., A.P. Shorokov, M. E. Krasovskiy, and L. P. Krasovskiy (USSR). On Carbonium and Carbanion Polymerization Mechanisms Under the Effects of Gamma Radiation	410
Kaplan, V. A., and V. A. Kabanov (USSR). Polymerization Processes in Insoluble Molecular Dispersions	433
Krasovskiy, V. I., M. Krasovskiy, and I. V. Polubnyy (Czechoslovakia). Kinetics of the Polymerization of Formaldehyde	434
Yessid, E. (Czechoslovakia). On the Mechanism of Ionic Polymerization	453
Zilgal, Z., and A. Fajda (Czechoslovakia). On the Role of Vinylic Compounds in the Cationic Polymerization of Isobutylene	472

45

DOLGOPLOSK, B. A., YERUSALIMSKIY, B. L., KROPUCHEVA, Ye. N.,
TINYAKOVA, Ye. L.

"Structure of Diene Polymers as a Function of the Nature
of Catalytic Systems"

Report presented at the Conference on International Symposium
on Macromolecular Chemistry. Montreal, Canada, 27 July to 1 August 61.

/ Institute for higher Molecular Compounds, Akademia
Nauk, SSSR, Leningrad, USSR.

LYUBETSKIY, S.G.; DOLGOPLOSK, B.A.; YERUSALIMSKIY, B.L.

Free-radical polymerization of ethylene. Part 1: Kinetics of ethylene polymerization in a benzene and heptane solution. Vysokom. soed. 3 no.5:734-739 My '61. (MIRA 14:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i Nauchno-issledovatel'skiy institut polimerizatsionnykh plastikov.
(Ethylene) (Polymerization)

22571

S/190/61/003/005/014/014
B110/B230

159202 2209, 1436, 1474

AUTHORS: Yerusalimskiy, B. L., Merkur'yeva, A. V., Baykova, N. P.

TITLE: Polymerization of chloroprene under the influence of organo-metallic compounds

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 5, 1961, 798

TEXT: Data published on the polymerization of chloroprene by methods other than initiation by free radicals disclose nothing about polymerization in the presence of conventional organometallic compounds. The present authors found the polymerization of chloroprene under the influence of organolithium and organomagnesium compounds to be possible. Butyl lithium and the system $[C_4H_9MgI + (C_4H_9)_2Mg]$ were used as initiators of polymerization. This system, formed in the course of the organomagnesium synthesis in hydrocarbon, has already been applied together with other organomagnesium compounds for the polymerization of isoprene. Under the influence of the system butyl magnesium iodide - dibutyl magnesium the polymerization of chloroprene takes place at a considerable rate between 40 and 60°C. At a concentration of the initiator of 0.012 to 0.025 and of the

Card 1/2

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22571

S/190/61/003/005/014/014
B110/B230

Polymerization of...

monomer of 2.5 moles/l, conversion amounts to ~5 per cent per hour at 60°C at the beginning of the reaction. Applying butyl lithium and a concentration of the initiator of 0.008 and of the monomer of 4.0 moles/l, conversion is 2 per cent per hour at 35°C at the beginning of the reaction. Polymers obtained in hexane under the conditions described are soluble in benzene to a limited extent (~50 per cent). Temperature of vitrification varies from -46 to -50°C for the individual specimens. [Abstracter's note: Essentially complete translation]. There are 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. X

SUBMITTED: January 28, 1961

Card 2/2

15 8060

25262

S/190/51/003/007/006/021
B101/B206

AUTHORS: Lyubetskiy, S. G., Dolgoplosk, B. A., Yerusalimskiy, B. L.
TITLE: Ethylene polymerization under the action of free radicals.
1. styrene polymerization in the presence of benzene with
the system solvent - monomer being above the critical point
PERIODICAL: Vysokomolekulyarnyye soedineniya, v. 3, no. 7, 1961,
1000-1002

TEXT: It was the purpose of the present paper to study ethylene poly-
merization in the presence of benzene as solvent and azobutyric acid
dinitrile as initiator. The system was above the critical point so that
it became comparable to a homogeneous state. Polymerization was carried
out at 70°C. Ethylene contained as impurities 0.5% methane, and 0.005% O₂.
at the most. Its partial pressure in the autoclave was kept constant with
an accuracy of 10⁻⁴ atm by periodical supply. The intrinsic viscosity of
the polymer was determined in decaline at 135°C. In the first experimental
series, the pressure was varied between 100 and 500 atm. and the benzene

Card 1/4

25162

5/190/61/001/0-7/106/021
2:01/1700

Ethylene polymerization under the ...

concentration was kept constant at 2.8 mole/l. Intrinsic viscosity (at 100 atm 0.35-0.37, at 500 atm 0.53-0.60), and polymerization rate (100 atm 0.9-1.0 g/l-hr, 500 atm 3.2-3.4 g/l-hr) were found to increase with increasing pressure. More important were the results given in Table 1 at 500 atm, 70°C, but with varied benzene concentration. Complete absence of benzene gives, however, lower values of intrinsic viscosity and polymerization rate. 92% of the polyethylene obtained was crystalline and resembled the low-pressure ethylene also in other respects. The authors refer to five papers by western authors. There are 2 tables and 7 references: 1 Soviet-bloc and 6 non-Soviet-bloc. The 5 references to English-language publications read as follows: Z. Laita, J. Polymer Sci., 38, 247, 459, 1959; W. Padgett, E. Perry, J. Polymer Sci., 37, 543, 1959; R. Laird, A. Morell, L. Seed, Disc. Faraday Soc., 22, 126, 1956; R. Heines, W. Bryant, A. Larchar, Industr. and Engng. Chem., 49, 1071, 1957; S. Kodama, V. Matsushima, A. Ueyoshi, T. Shimidzu, J. Polymer Sci., 41, 89, 1959.

Card 2/4

BOGOMOL'NIY, V. Ya.; YERUSALIMSKIY, B.L.; POKROVSKIY, Ye.I.

Free radical reactions in solutions. Part 18: Relative activity of $\text{CH}_3\cdot$ and $(\text{CH}_3)_3\text{CO}\cdot$ radicals in the reaction of detachment of H-atom from hydrocarbons. Zhur.ob.khim. 31 no.8: 2675-2682 Ag '61. (MIRA 14:8)

(Radicals (Chemistry))

35293

S/190/62/004/004/009/019
B117/B138

53700
53830
AUTHORS:

Lyubetskiy, S. G., Dolgoplosk, B. A., Yerusalimskiy, B. L.

TITLE:

Polymerization of ethylene affected by free radicals III.
Polymerization of ethylene with the monomer - polymer system in a non-homogeneous state

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962,
533-539

TEXT: The polymerization kinetics of ethylene was studied in the presence of azoisobutyric acid dinitrile and benzene between 100-600 atm at 70°C. The activation energy was determined by additional experiments at 60 and 80°C and found to be 17 ± 2 kcal/mole. At relatively low monomer conversion at 100-300 atm, the rate of polymerization has a first-order dependence in relation to monomer concentration. Here the degree of polymerization changes linearly with the monomer concentration. At pressures above 300 atm, the dependence of polymerization rate and molecular weight of the polymer on the monomer concentration shows a marked change after this. The degree of polymerization does not change linearly with the concentration. The dependence of rate and degree of polymerization on the volatility of

Card 1/3

S/190/62/004/004/009/019
B117/B138

Polymerization of ethylene...

ethylene is similar. At 400-600 atm, the order of reaction in relation to volatility approaches 1.9. In experiments of up to 20 hr duration, gradual increase of the molecular weight of the polymer and constant polymerization rate were observed. This confirms the concept of "live" polymer chains in polymerization. Their existence was proved by direct experiments at 20°C. The increasing molecular weight clearly showed that the polymerization of ethylene at room temperature develops further on "live" polymer chains. The change of the dependence of degree and rate of polymerization observed at the beginning of the reaction at 300-400 atm is probably connected with the development of an active solid phase. The aggregation of the growing chains, which leads to accumulation of the "live" polymer, plays a decisive role. The change of the polymerization mechanism setting in above 300 atm, results in a functional dependence of general form: $k_a = f(\bar{P}_{pol}) = f([M])^n$, where k_a is the constant of the rate of aggregation of "live" polymer radicals, \bar{P}_{pol} is the mean degree of polymerization, and $[M]$ is the monomer concentration. The deviation of the order of reaction in relation to the initiator concentration, which becomes especially noticeable in the absence of the solvent, points to a change of the polymerization mechanism. The

Polymerization of ethylene...

S/190/62/004/004/009/019
B117/B138

order of reaction of 0.69 was ascertained without solvent, and of 0.53 -0.58 in the presence of benzene (0.14-0.28 mole/l). The increase of polymerization rate and molecular weight of the polymer observed in the presence of small benzene amounts can also be traced back to the growth of "live" polymer chains in the solid phase. There are 6 figures and 4 tables. The two most important English-language references are: R. Buchdal, Disc. Faraday Soc., 22, 150, 1956; C. Bamford, A. Jenkins, M. Symons, M. Townsed, J. Polymer Sci., 34, 181, 1959.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR). Nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Scientific Research Institute of Polymerization Plastics)

SUBMITTED: March 10, 1961

Card 3/3

X

S/190/62/004/009/005/014
B101/B144

AUTHORS: Dolgoplosk, B. A., Yeruslimskiy, B. L., Kavunenko, A. P.,
Merkur'yeva, A. V.

TITLE: Polymerization of diene hydrocarbons under the action of
organomagnesium compounds

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 9, 1962, 1333-1337

TEXT: The polymerization of butadiene (I), 2,3-dimethyl butadiene (II), and chloroprene (III) by the system $(C_4H_9)_2Mg - C_4H_9MgI$ was studied under the same conditions as that of isoprene described previously (Vysokomolek. soyed., 2, 541, 1960). Results: (1) A solution of 25 - 30 mole% I in hexane yielded ~10% polymer with 77 - 75% 1,4 bonds at 100°C. Under the same conditions, II yielded ~40% polymer with 97% 1,4 bonds. The polymerization proceeds more slowly than that of isoprene. The polymers are completely soluble in benzene and have lost ~6-8% of their double bonds. It is assumed, therefore, that an intramolecular cyclization occurs. (2) The polymerization of III in hexane at 40 - 60°C yielded up to 20% polymer. The polymers had limited solubility in benzene, and their glass transition

Card 1/2

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Polymerization of diene...

S/190/62/004/009/005/014
B101/B144

point was -46 to -49°C . (3) The consumption of organomagnesium initiators during the polymerization of isoprene was studied. The content in C_4H_{10} liberated by H_2SO_4 was determined chromatographically. The continuous decrease in initiator concentration and the continuous increase in molecular weight during the reaction suggest a consecutive organometal synthesis. Monomer addition to the C-Mg bond is comparatively slow. There are 1 figure and 4 tables.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds AS USSR)

SUBMITTED: May 20, 1961

✓

Card 2/2

MILOVSKAYA, Ye.B.; SOKOLOVA, O.V.; YERUSALIMSKIY, B.L.

Transisomerization of dimethyl maleate under the influence
of free radicals. Zhur.ob.khim. 32 no.2:621-626 F '62.

(MIRA 15:2)

(Maleic acid)
(Isomerization)
(Radicals (Chemistry))

YERUSALIMSKIY, B.L.

Modern concepts of the mechanism for the cation polymerization of vinyl monomers. Usp.khim 32 no.12:1458-1487 D '63. (MIRA 17:2)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

YERUSALIMSKIY B.L.; KRASNOSEL'SKAYA, I.G.; MAZUREK, V.V.

Polymerization of chloroprene in the presence of organometallic
compounds. Part 1: System chloroprene - butyllithium. Vysokom.
soed. 6 no. 7: 1294-1301 J1 '64 (MIRA 18:2)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

ACCESSION NR: AP4045430

S/0190/64/006/009/1637/1641

AUTHOR: Krasnosel'skaya, I.G., Yerusalimskiy, B.L.

TITLE: Polymerization of chloroprene under the influence of dibutyl magnesium and butylmagnesium iodide

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 9, 1964, 1637-1641

TOPIC TAGS: chloroprene, dibutyl magnesium, butylmagnesium iodide, organomagnesium compound, chain termination, chain propagation, activation, initiator, polymerization catalyst, polychloroprene

ABSTRACT: The kinetics of polymerization of the system chloroprene-dibutyl magnesium-buthylmagnesium iodide were investigated by carrying out the polymerization in heptane or a fraction of purified kerosene at a monomer concentration (M) of 2-8 mole/liter and an initiator concentration (C) of 0.01-0.08 mole/liter. Under the given conditions, the polymerization reached an almost constant rate in the initial state to slow down gradually later and to stop completely on disappearance of the polymer. At 40C, (M) = 6 and (C)=0.08 mole/liter, the maximum yield was 55%. The plotter experimental data show that for the

Card 1/3

ACCESSION NR: AP4045430

initial rate of polymerization, calculated from the conversion after the first 40 min., the order of reaction was 0.95 with respect to the initiator and 1.09 with respect to the monomer. After 0.25 min., the reaction mixture contained only 10% of the starting initiator, and in 0.5 min. it completely disappeared. The total content of organo-magnesium compounds after 0.25 min. was 92% of the initial. Then, the total concentration of organic magnesium compounds continued to decrease slowly. The decrease in the initiator concentration can be attributed to the parallel reactions of initiation and destruction. The rate constants of the elementary reactions and the activation energies of chain propagation and chain termination were determined and the data are plotted. For chain propagation, the constants were $k_1 = 8.4$ and $k_{3a} = 0.82 \text{ min}^{-1}$; for chain termination at 40, 50 and 60°C the constants were 0.0018, 0.0037 and 0.0087 min^{-1} , respectively. The activation energy of chain termination obtained from these values is $17.9 \pm 0.5 \text{ kcal/mole}$. The average viscosimetric molecular weight of polychloroprene calculated from the formula $\mu = 1.55 \times 10^{-4} \text{ M}^{0.71}$ (in benzene) increased continuously in the initial stage of the polymerization. This confirms the kinetic scheme according to which the chain propagation is a stepwise organometallic synthesis. The results indicate an anionic

Card 2/3

ACCESSION NR: AP4045430

mechanism for the reaction. The resulting polymers lose their solubility in benzene at a certain degree of conversion (during polymerization at 40C, at a polymer yield of about 40%). The microstructure of polychloroprene formed under the influence of organo-magnesium compounds practically coincides with the typical structure of polymers obtained by the radical polymerization of chloroprene. "The authors are greatly indebted to A. A. Korotkov for his useful comments. The microstructural data on the polymers were provided by Ye. I. Pokrovskiy and G. V. Lyubimova." Orig. art. has: 6 formulas, 5 figures and 1 table.

ASSOCIATION: Institut vyssokomolekulyarnykh soedineniy AN SSSR (Institute of High-Molecular Compounds, AN SSSR)

SUBMITTED: 26Oct63

ENCL: 00

SUB CODE: OC

NO REF SOV: 004

OTHER: 002

Card 3/3

DUNTOV, P.I.; PARUGALIMSKIY, B.L.

Kinetics of copolymerization of ethylene with vinyl chloride. Vysokom.
soed. 7 no.6:1075-1079 Je '65. (MIRA 18:9)

1. Okhtinaki khimicheskiy kombinat i Institut vysokomolekulyarnykh
soyedineniy AN SSSR.

L 37646-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6011237 (A) SOURCE CODE: UR/0413/66/000/006/0075/0075

INVENTOR: Yerusalimskiy, B. L.; Kulevskaya, I. V.; Kamalov, S. K.;
Frenkel', S. Ya.

ORG: none

TITLE: Preparation of polyacrylonitrile, Class 39, No. 179925
[announced by the Institute of High-Molecular Compounds, AN SSSR]
[Institut vysokomolekulyarnykh soyedineniy AN SSSR]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
no. 6, 1966, 75

TOPIC TAGS: polyacrylonitrile, acrylonitrile, polymerization

ABSTRACT: This Author Certificate introduces a method of preparing
polyacrylonitrile by polymerization of acrylonitrile in a hydrocarbon
solvent at about -75C in the presence of organomagnesium catalysts.
To extend the variety of organomagnesium catalysts, complexes of
magnesium alkyl halides or magnesium alkyls with dimethylsulfoxide
are suggested. [LD]

SUB CODE: 11,07/ SUBM DATE: 13Feb65,

Card 1/1

vmb

UDC: 678.745.32

TOMARKIN, N.Ya.; VERUSALIMSKIY, B.I.

Kinetics of ethylene polymerization under the effect of tetrazethy-
tetrazene. *Vysokomolekul. soed.* 7 no.7:1213-1216 JI '65.

(MIRA 18:8)

1. Obhtinskiy khimicheskiy kombinat i Institut vysokomolekulyarnykh
soyedineniy AN SSSR.

L 33526-66 EWT(m)/T/EWP(j) IJP(c) WW/RM

ACC NR: AP6015052

(A)

SOURCE CODE: UR/0190/66/008/005/0876/0881

AUTHOR: Kulevskaya, I. V.; Yerusalimskiy, B. L.; Mazurek, V. V.

ORG: Institute of Macromolecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soedineniy AN SSSR)

TITLE: Polymerization kinetics of the acrylonitrile under the effect of butylmagnesium chloride

SOURCE: Vysokomolekulyarnyye soedineniya, v. 8, no. 5, 1966, 876-881

TOPIC TAGS: polymer, monomer, polymerization kinetics, acrylonitrile, ~~magnesium~~, chloride, toluene, MAGNESIUM COMPOUND

ABSTRACT: The kinetics of polymerization in the system acrylonitrile, toluene, and butylmagnesium chloride at -75C has been investigated. A mechanism of the polymerization process involving elementary stages through intermediate complexes was proposed. For the initial stage of polymerization, the first order of the catalyst and the second order of the monomer were shown. The molecular weight of the polymers exceeded 200,000. Orig. art. has: 7 figures, 9 formulas, and 1 table. [NT]

SUB CODE: 07/ SUBM DATE: 13May65/ ORIG REF: 006/ OTH REF: 012

Card 1/1

UDC: 66.095.26+678.745

L 44583-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6015672 (A) SOURCE CODE: UR/0413/66/000/009/0076/0076

33
32

INVENTOR: Yerusalimskiy, B. L.; Krasnosel'skaya, I. G.

B

ORG: none

TITLE: Method for obtaining polychloroprene.¹⁵ Class 39, No. 181293¹⁵
[announced by Institute of Micromolecular Compounds AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 76

TOPIC TAGS: polychloroprene, chloroprene, polymerization, polymerization catalyst

ABSTRACT: An Author Certificate has been issued for a method of obtaining polychloroprene by polymerization of chloroprene in a medium of inert organic solvent at room temperature in the presence of an organometallic catalyst. To increase the polychloroprene yield, a complex of

Card 1/2

UDC: 678.763.2

L 44583-66

ACC NR: AP6015672

lithiobutyl-lithiumiodide-dibutylmagnesium is used as the organo-
metallic catalyst. [Translation]

[NT]

SUB CODE: 11/ SUBM DATE: 06Feb65/

Card 2/2 *lym*

YERUSALIMSKIY, B.L.; KULEVSKAYA, I.V.

Polymerization of acrylonitrile under the effect of organomagnesium compounds. Vysokom. soed. 7 no.1:184-185 Ja '65.

(MIRA 18:5)

BRESLER, Semen Yefimovich; YERUSALIMSKIY, Boris L'vovich;
PODDUBENYI, I.Ya., doktor KHIM. nauk, red.

[Physics and chemistry of macromolecules] Fizika i khimiia makromolekul. Moskva, Nauka, 1965. 508 p.
(MIRA 18:7)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962910019-3

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962910019-3"

"APPROVED FOR RELEASE: 03/15/2001

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APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962910019-3"

YERUSALIMSKIY, B.M., dotsent (Kiyev)

Carrying of dysentery bacilli by healthy persons and bacteria
secretion in subclinical forms of dysentery. Vrach,delo no.3:
299-302 Mr '60. (MIRA 13:6)

1. Kafedra infektsionnykh bolezney (zav. - prof. G.I. Khomenko)
Kiyevskogo instituta usovershenstvovaniya vrachey.
(DYSENTERY)

YERUSALIMSKIY, B.M., dotsent

Cortisone therapy as a method for the differential diagnosis of
jaundices of varied etiology. Vrach. delo no.1:59-61 Ja '62.

(MIRA 15:2)

1. Kafedra infektsionnykh bolezney (zav. - prof. G.I.Khomenko)
Kiyevskogo instituta usovershenstvovaniya vrachey.
(CORTISONE) (JAUNDICE)

YERUSALINSKIY, L. M.

"The Problem of Lymphogranulomatosis of the Lungs", Arkhiv Patol., 10, No. 2, 1948.

Docent, Therapeutic Dept., Oncology Clinic, Kiev. Rengeno-Radiological Inst., -1947-.

YERUSALIMSKIY. L.M.

Yerusalimskiy, L.M. "Hemimyxedema", Vracheb. delo, 1949, No. 1, paragraphs 81-84.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)

81707
S/020/60/132/05/41/069
B004/B011

5.2100(B)

AUTHORS: Beletskiy, M. S., Yerusalimskiy, M. I.
TITLE: On the Mechanism of the Protection of Magnesium Against
Oxidation
PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 5,
pp. 1122-1124

TEXT: The authors discuss the easy oxidizability of magnesium due to the structure of its electron sheath. The valence electrons of the magnesium surface, which are in the 3s ground state, readily react with the p-electrons of oxygen. These statements were confirmed by experiments. By introducing neodymium into the magnesium surface, the 3s electrons of Mg are raised to the higher p-level and, in compliance with the selection rule, they are protected against bonding with the valence electrons of oxygen. The experiments are described. In a vacuum chamber ($5 - 7 \cdot 10^{-6}$ torr), magnesium, magnesium-neodymium alloy (45% Nd), or pure neodymium are sprinkled onto a collodium film by a molybdenum spiral with a current

Card 1/2

On the Mechanism of the Protection of
Magnesium Against Oxidation

81707
S/020/60/132/05/41/069
B004/B011

impulse (7-8 a for Mg and Mg-Nd alloy, 18-20 a for Nd). Of the metal films thus obtained, electron diffraction pictures were taken both immediately and after long standing in the air. Fig. 1 shows that in the case of pure Mg, the interference rings of MgO grow more and more intensive after standing in the air, while a small addition of Nd suppresses the formation of MgO still after one month of standing in the air (Fig. 2). There are 2 figures and 2 Soviet references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy alyuminiyevo-
magniyevyy institut (All-Union Scientific Research Institute
of Aluminum and Magnesium)

PRESENTED: February 13, 1960, by G. V. Kurdyumov, Academician

SUBMITTED: February 6, 1960

4

Card 2/2

YERUSALIMSKIY, M. I.

81859

S/D20/60/133/02/28/068
B016/B060

5.2300

AUTHORS: Beletskiy, M. S., Yerusalimskiy, M. I.

TITLE: Electron Diffraction Study²¹ of Neodymium Oxides

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2,
pp. 355-358

TEXT: The authors discuss the rather scarce data contained in publications (Iost and others, Ref. 1, and also Refs. 3-5) concerning the oxides of the rare earth elements. It follows herefrom that neodymium sesquioxide is present in hexagonal and cubic modification. A higher degree of oxidation to NdO_2 , has hitherto not been known. Oxidation conditions and intermediary oxides are not described either. For the purpose of studying the oxidation processes of neodymium, the authors made use of the diffraction method of fast electrons on thin oxidized films of this element. A special apparatus with a vacuum of $6-7 \cdot 10^{-6}$ torr served for the purpose. As a protection against the "burning through" of the collodium base, the authors used a copper net (60-130 mesh, electrolyti-

Card 1/3

81859

S/020/60/133/02/28/068
B016/B060

Electron Diffraction Study of Neodymium Oxides

cally prepared). Electron diffraction pictures of the nonoxidized neodymium were obtained by immediately placing the neodymium film in an electron diffraction apparatus. A thermocouple was then fastened onto the copper net mentioned, and the latter was heated in the furnace along with the film. At the same time, film fragments were kept at room temperature, and oxidation on the air was studied on them. Fig. 1 a shows the electron diffraction picture of the initial film. Table 1 supplies experimental data, from which it appears that the thin neodymium film oxidizes with relative rapidity at room temperature, giving rise to the cubic modification of the sesquioxide. Oxygen diffuses in the film interior already at room temperature with a certain intensity (Fig. 1b and 1v, respectively). The blurred interference rings of the compound formed points to a considerable distortion of its lattice. Despite considerable spread of the lattice constant value, the average value $a = 11.36 \text{ \AA}$ points to the continued enlargement of the elementary cell of neodymium on longer storing in the air and at room temperature. The authors therefore believe that the oxygen diffusion progresses in the lattice of the sesquioxide, whereby the lattice is irregularly distorted. By a temperature rise up to 500°C there also forms a cubic lattice with a constant

Card 2/3

Electron Diffraction Study of
Neodymium Oxides

81859
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B016/B060

$a = 11.05 \text{ \AA}$. The degree of ordering of the atoms in the lattice rises at 700°C (Table 2). The authors reach the conclusion that an oxide Nd_2O_3 and probably Nd_6O_{11} results at temperatures up to 700°C . The compound corresponding to NdO_2 forms with the oxidation of neodymium vapors only. All of these compounds exhibit a cubic lattice. There are 1 figure, 2 tables, and 9 references: 3 Soviet, 1 French, and 1 American.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy alyuminiyevo-magniyevyy institut (All-Union Scientific Research Institute of Aluminum and Magnesium)

PRESENTED: February 13, 1960, by G. V. Kurdymov, Academician

SUBMITTED: February 6, 1960

4

Card 3/3

YERUSALIMSKIY, N. D.

see also:

IYERUSALIMSKIY,

See also IYERUSALIMSKIY, N. D.

YERUSLITSKIY, P. I.

29358. Dva sluchaya amerikanskogo blastomikoza kozhi tipa Dzhilkrista. Trudy Molotovsk. gos. stomatol. in-ta, vyp. 8, 1949, s. 383-87.

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

YERUSALIMSKIY, P. I.

YERUSALIMSKIY, P. I. Prof.

"A Causal of Early Tabes."

Vestnik venerologii i dermatologii (Bulletin of Venerology Dermatology),
No 1 January-February 1954, (Blomper), Moscow.

IYERUSALIMSKIY, P.I., prof.; DATSEDOVSKIY, B.M., kand. med. nauk.

"Syphilis, diagnosis and therapy" by K.R. Astvatsaturov. Reviewed
by P.I. Ierusalimskii, B.M. Datskovskii. Sov. med. 21 no.7:157-158
Jl '57. (MIRA 12:3)
(SYPHILIS) (ASTVATSATUROV, K.R.)

YERUSALIMSKIY, V.A.

Nashi avtomobili (Soviet automobiles). Ris. V. Tambi i E. Voishvillo. Moskva, Detgiz.
1953. 32 p.

SO: Monthly List of Russian Accessions, Vol 7, No 9, Dec 1954

YERUSALIMSKIY, V. A., Col.

Yerusalikiv, V. A., Col - Author of brochure, Sposoby Uvelicheniya Mezhduremnoy Probezny Avtomobiley (How to Increase the Interrepair Mileage of Vehicles), which was critically reviewed by Engr-Lt Col Yu. SEREBRYAKOV. (Voyenny Vestnik, No. 3, Mar 54)


SO: SUM 175, 6 August 1954

I YERUSALIMSKIY, V.A.

BERMAN, Vil'gel'm VIF'gel'movich,; MALAKHOVSKIY, A.N., inzh., retsentsent,;
IYERUSALIMSKIY, V.A., inzh., red.; GOFMAN, Ye.K., red. izd-va,;
SPERANSKAYA, O.V., tekhn. red.

[Racing cars] Gonochnye avtomobili. Moskva, Gos. nauchno-tekhn.
izd-vo mashinostroit. lit-ry, 1958. 264 p. (MIRA 11:10)
(Automobiles, Racing)

"The Machinability of Alloyed Structural Steel."
Stanki i Instrument Vol. 15, No. 3, 1944



ZNAMENSKIY, M.S., prof.; YERUSALIMSKIY, Ye.I. (Frunze)

Effectiveness of the signaling system in industrial trauma. Sov.zdrav.
18 no.10:22-24 '59. (MIRA 13:2)

1. Iz travmatologicheskogo otdeleniya Kirgizskoy respublikanskoy kli-
nicheskoy bol'nitsy (glavnyy vrach K.S. Nigmatulin) i Frunzenskoy
gorodskoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach Z.P.
Grinberg).

(ACCIDENTS INDUSTRIAL)

GRINBERG, Z.P.; YERUSALIMSKIY, Ye.I.

Effect of sanitary conditions in Frunze on the decrease in the
amount of atmospheric dust. Gig. i san. no. 10:74-75 0 '60.

(MIRA 13:12)

1. Iz Frunzenskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(FRUNZE—DUST)

YERUSALIMSKIY, Ye.I.

Type, character and localization of industrial injuries in some industrial enterprises in Frunze. Sov. zdrav. Kir. no.2:29-32
Mr-Apr '62. (MIRA 15:5)

1. Iz Frunzenskoy gorodskoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach - N.I.Galushko).
(FRUNZE—INDUSTRIAL ACCIDENTS)

ZNAMENSKIY, M.S., prof.; YERUSALIMSKIY, Ye.I. (Frunze)

Evaluating the effectiveness of the signaling system in industrial
traumatism. Sov. zdrav. 21 no.5:59-62 '62. (MIRA 15:5)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii (zav.-
prof. M.S. Znamenskiy) Kirgizskogo meditsinskogo instituta.
(INDUSTRIAL ACCIDENTS)

FOMINA, A., doktor khim.nauk; YERUSENKO, V.

Oxidative decomposition of kerogen in dictyonema shale by alkaline
potassium permanganate. Izv. AN Est. SSR. Ser. fiz.-mat. i tekhn.nauk
12 no.2:189-197 '63. (MIRA 16:10)

1. Academy of Sciences of the Estonian S.S.R., Institute of
Chemistry.

SEMIOTROCHEV, V.L.; BARAK, TS.M.; SPITSIN, M.P.; POPINYAN, I.O.;
YERUSHEVA, L.F.; MISALEVA, O.S.

Pasteurellosis in man in Kazalinskiy District of Kzyl-Orda Province.
Zhur. mikrobiol., epid. i immun. 42 no.8:143-144 Ag '65. (MIRA 18:9)

1. Sredneaziatskiy nauchno-issledovatel'skiy protivochumnyy in-
stitut, Alma-Ata.

YERUSHKOVSKIY, Yu.S.

Strict enforcement of governmental regulations. Vest.sviazi 25
no.2:21 F '65. (MIRA 18:6)

1. Zaveduyushchiy otделom transporta i svyazi Komiteta partiyno-
gosudarstvennogo kontrola Moskovskogo gorodskogo kmiteta
Kommunisticheskoy partii Sovetskogo Soyuza i Moskovskogo gorodskogo
Soveta deputatov trudyashchikhaya.

YERVANDYAN, S.G.

Pollen fertility and the growth of pollen tubes in potatoes on
artificial nutrient media. Izv. All Arm. SSR. Biol. nauki 17 no 7:
79-84 J1 '64.

(MIRA 17:10)

YERVANDYAN, S.G.

Nature of morphogenetic processes in potatoes. Izv. AN Arm. SSR. Biol.
nauki 18 no.3:50-56 Apr '65. (MIRA 18:5)

YERVANDYAN, S.G.

Macrosporogenesis and development of the female gametophyte
in potatoes, Izv. AN Arm. SSR. Biol. nauki 18 no.11:76-81
N '65. (MIRA 19:1)

YERVANTOV, G., inzh.

For the defense of clear skies. Tekh. mol. 31 no.6:18-21 '63.
(MIRA 16:7)

(Anti-aircraft guns)

YERVEISYAN, L.N.

Plastic repair of extensive cranial defects with polymethylmeta-
crylate. Sovet.med. No.2:22 Feb 51. (OJML 20:6)

1. Candidate Medical Sciences. 2. Leningrad.

SEROV, N.A.; YERYAGINA, V.A.

Experimental stability testing of conical cooling towers.
Nauch.dokl.vys.shkoly; stroi. no.1:153-158 '59.
(MIRA 12:10)

1. Rekomendovana kafedroy stroitel'noy mekhaniki Leningradskogo
inzhenerno-stroitel'nogo instituta.
(Cooling-towers--Testing)

YERYAMKIN, G.I.

Cystography by double separate administrations of contrast media.
Urologiia 25 no. 4:31-35 J1-Ag '60. (MIRA 14:1)
(BLADDER--RADIOGRAPHY)

BALAMATOV, N.N.; YER'YEV, B.A.

System for exact regulation and stabilization of the electron
energy in a betatron. Prib. i tekhn. eksp. 8 no.4:24-27
Jl-Ag '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki
Moskovskogo gosudarstvennogo universiteta.

YERYGIN, D.P. (Moscow)

Acquainting students with the manufacture of glass and cement.
Khim. v shkole 9 no.4:28-34 J1-Ag '54. (MLRA 7:8)
(Glass manufacture) (Cement)

YERYGIN, D.P. (Moskva)

Industrial training of students in a chemical plant. Khim. v shkole
11 no.4:65-67 J1 '36. (MLRA 9:9)
(Industrial education)

YERYGIN, D.P. (Moskva)

Industrial excursions carried out by chemistry teachers. Khim. v
shkole 13 no.1:63-65 Ja-F '58. (MIRA 10:12)
(Chemistry--Study and teaching) (School excursions)

YERYGIN, D.P.

Methods of acquainting students with some concepts of polymers.
Uch.zap.MGPI no.225:164-174 '64.

(MIRA 18:12)

YERYGIN, D.P.

Production practice in chemical technology in pedagogical
institutes. Uch.zap.MGPI no.225:256-264 '64.

(MIRA 18:12)

YERYGIN, D.P.

Industrial training of chemistry teachers. Politekh.obuch. no.3:
78-80 Mr '59. (MIRA 12:4)

1. Moskovskiy gorodskoy institut usovershenstvovaniya uchiteley.
(Chemistry—Study and teaching)

YERYGIN, D.P.

School club at the Pedagogical Institute. Khim. v shkole 16
no. 3:66-73 My-Je '61. (MIRA 14:5)

1. Pedagogicheskiy institut imeni V.I. Lenina, Moskva.
(Chemistry—Study and teaching)

YERYGIN, P.S.																									
CA																									
<p>Exchange in the flooded seedlings of rice. P. S. Yerygin (All-Union Rice Exptl. Sta., Krasnodar). <i>Compt. rend. acad. sci. P.R.S.S.</i> 40, 291 8(1945) (in English); <i>C.A.B.</i> 31, 1468. Sprouted rice seeds were planted and (a) flooded to a depth of 20 cm. or (b) to a depth of 1 cm. or (c) kept moist (I). Weights and analyses were made at the time of formation of each leaf up to the fifth (time of tillering). Growth and consumption of reserve food were inhibited only during complete submergence. Submerged seedlings (II) weighed half as much as those in I, but soon surpassed the latter when leaves appeared above the H₂O level. II contained about 25% less monosaccharide, sucrose, starch, and total N than plants in I, slightly less protein, and 75% more hemicellulose. It is concluded that while submergence has an inhibitory action, death of II is due to the disturbance of respiratory gas-exchange. Carl H. Gilbert</p>																									
<p>ASH, S.L.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																									

21859 RYGIN, P. S. vliyaniye ovodnennosti pochvy na dykhaniye
korney risa. Trudy Krasnodarsk. in-ta -pishch. prom-sti,
vyp. 7, 1949, s. 3-6.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

USSR / Cultivated Plants. Grains.

M-3

Abs Jour: Ref Zhur-Biol., 1958, No 16, 72935.

Author : Aleshin, Yo. P.; Vorygin, P. S.

Inst : Kuban Rice Experimental Station

Title : Preplanting Treatment of Seeds for the Purpose of
Obtaining Thick Rice Sprouts.

Orig Pub: V sb.: Kratkiye itogi nauchno-issled. raboty (Kub-
ansk, ris. opytn. st.) za 1956 g. Krasnodar, "Sov.
Kuban'", 1957, 37-41.

Abstract: Soaking seeds in a solution of 2,4-D and potassium
salt of hetero-auxin (140 mg/l) increases germina-
tion when sprouting on unflooded soil. Germination
of seeds in anaerobic conditions with temperature 2
and 5° increases the stability of the rice sprouts
during deep flooding. Treatment of the seeds with
(NH₄)₂SO₄ guarantees thicker and more viable sprouts.
-- O. V. Yakushkina.

Card 1/1

USSR/Cultivated Plants. Grains.

M

Abs Jour : Ref Zhur-Biol., No 15, 1958, 63135

grain moisture increases in the field, the
rice quality decreases. O. V. Yakushkina

Card : 2/2

38

COUNTRY : USSR
CATEGORY :

M-4

ABS. JOUR. : RZBiol., No. 19 1958, No. 87034

AUTHOR : Vorygin, P. S.
INST. : Academy of Sciences USSR
TITLE : Physiological Substantiation of Irrigation
of Rice by Flooding.

ORIG. PUB. : Sb.: Biol. osnovy oroshayem. zemled. Moscow,
AN SSSR, 1957, 164-171

ABSTRACT : Data of the All-Union Rice Experiment Station.
In the production of rice the water conditions of the soil
vary during the growing period. During the period of seed
germination a soil that is not flooded is favorable to the
development of a dense stand of seedlings. With a soil
moisture content in excess of 80-90% of capillary water-
holding capacity, germination of rice seeds is inhibited,
the nature of germination is altered (instead of the radi-
cal the coleoptyl begins to develop), respiration rate is
decreased, and also the activity of catalase and saccharase.
On the other hand, by the end of the period of emerging of
seedlings, flooding provides conditions that are more

CARD: 1/2

CARD: 2/2

YERYGIN, P.S.; VOLODARSKIY, N.I.

Ivan Sergeevich Kosenko's 60th birthday. Bot.khur. 42 no.6:960-961
Je '57. (MIRA 10:7)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Kosenko, Ivan Sergeevich, 1896-)

20-5-49/54

AUTHORS: Yerygin, P.S., Ryabchun, O. M.

TITLE: The Root Structure of the Rice Plant as Dependent on the Water Regime of the Soil (Zavisimost' stroyeniya korney risa ot vodnogo rezhima pochvy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5, pp. 1028-1030 (USSR)

ABSTRACT: Rice is known to be cultivated at different oikological conditions. On rice fields which are 2 - 15 cm under water, nearly 80 % of the entire rice is cultivated. The remainder is either flooded 20 cm and more or is harvested on filds that are hardly flooded at all during the entire period of vegetation. With such excess and insufficient degree of moistening the yields of crops are only half those obtained by more shallow layers. The broad dispersion of conditions of growth has since long caused research workers to study the anatomy of the rice root. Among other things, the schlerenzyma cylinders of the rice root quickly lignifies in the case of dehydration and a drying of the soil. The absorbing surface of the roots is increased by the formation of lateral roots and little hair-like formations.

Card 1/3

The Root Structure of the Rice Plant as Dependent on the Water Regime of the Soil

20-5-49/54

anatomical structure of the root (table 1). The main causes of the difference in root structure in the case of floods as compared with moistening were processes of growth. They were intense in the case of flooded roots, and therefore the number of radial cell series as well as of their cycles inside the root increase. In the central cylinder a larger number of metaxylem vessels was formed. The increase of the diameter of the central cylinder is also due to the thickening of the cell walls. When moistening they are from 1 1/2 to twice as thick as when flooded. All this tends to show that moistening does not modify the anatomical structure of rice roots to such an extent that this might be called a change of its hygrophytic nature. There are 1 figure. 1 table and 8 Slavic references.

ASSOCIATION: Kuban' Rice Testing Station (Kubanskaya risovaya opytnaya stantsiya)
PRESENTED: by A.L. Kursanov, Academician , April 6, 1957
SUBMITTED: April 5, 1957
AVAILABLE: Library of Congress

Card 3/3

YERYGIN, P.S.; AIESHIN, Ye.P.; SAUTICH, M.A.; FENELONOVA, T.M.

Effect of gibberellic acid on rice. Fiziol. rast. 8
no.4:460-466 '61. (MIRA 14:11)

1. Kuban Experimental Rice Station, Krasnodar.
(Gibberellic acid)
(Rice)

YERIKALIN, A.

Collective Farms

Inspection committee of the collective farm at work. Kolkh. proiz. 12 No. 6 1952.

Monthly List of Russian Accessions, Library of Congress, October, 1952, UNCLASSIFIED

LUZGACHEV, I.N.; YERYKALIN, V.M.

Compressed air device for extracting piles. Rats i izobr. predl.
v stroi. no.58:18 '53. (MLSA 7:2)
(Pile driving)

ACC NR: AP6001698

ERT(M)/ETC(F)/EPF(N)-2/ENG(M) W/DH

AUTHOR: Yerykalov, A. N.

SOURCE CODE: UR/0089/65/019/005/0462/463

ORG: none

TITLE: An estimate of the accuracy of the variational method

SOURCE: Atomnaya energiya, v. 19, no. 5, 1966, 462-463

TOPIC TAGS: nuclear reactor ^{17.47.55} characteristic, variational method, *nuclear reactor technology,*
neutron distribution

ABSTRACT: In many reactor problems it is important to find the critical dimensions without a detailed study of neutron distribution. The present letter discusses one of the existing approximate methods which permits the estimate of the upper as well as of the lower limits for the eigenvalue of the self-adjoint operator. The neutron flux ϕ in the reactor is described by the single group diffusion equation with the time constant λ .

$$L\phi = k\phi.$$

(1)

and the accuracy of the eigenvalue is estimated by a method analogous to the one used by G. Temple (Proc. Roy. Soc., 211A, 204, 1952). The eigenvalue λ_0 is on the one side bounded by

$$q = \frac{(\phi_0, L\phi_0)}{(\phi_0, \phi_0)} < \lambda_0.$$

(2)

Card 1/2

UDC: 621.039.51

L 13950-66

ACC NR: AP6001698

($\psi_0(r)$ is a trial solution) and on the other by

$$\lambda_1 < q + \Delta q, \quad (3)$$

where

$$\Delta q = \frac{1}{q-a} \cdot \frac{(L\psi_0 - q\psi_0, L\psi_0 - q\psi_0)}{(\psi_0, \psi_0)}, \quad (4)$$

For a reactor in the critical state the relative error in reactor size does not exceed 0.3%. The author thanks Yu. V. Petrov, G. S. Danilov, and Ye. A. Garusov for their valuable advice and discussion of the results. Orig. art. has: 9 formulas.

SUB CODE: 18, 20 / SUBM DATE: 13Feb65

Card 2/2

YERYKALOV, N.A.

Microdetermination of prothrombin in blood; Lab. delo 6 [i.e. 4]
no. 4:18-19 J1-Ag '58 (MIRA 11:9)
(PROTHROMBIN)

Yerykalov, Yu. G.

USSR/ Analytical Chemistry - Analysis of Organic Substances

G-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12156

Author : Spryskov A.A., Yerykalov Yu.G.

Title : Quantitative Determination of Isomers of Dichlorobenzenes

Orig Pub : Zh. analit. khimii, 1956, 11, No 4, 492-494

Abstract : After determination of p-dichlorobenzene (I) by thermal method, and m-dichlorobenzene (II) by the bromide-bromate method developed by the authors specifically for II, o-dichlorobenzene (III) can be determined, in mixtures of the three isomers, by difference. After ascertaining the content in I, from the solidification point of the mixture under investigation, this mixture is subjected to nitration and reduction, in order to determine II by bromination. Sample of the substance being analyzed (. 1.5 g) is mixed with an equal weight of water, there are added, after cooling, dropwise and within 30 minutes, 15 g HNO_3 (Sp. Gr. 1.5), after $\frac{1}{2}$ hour the mixture

Card 1/3

USSR/ Analytical Chemistry - Analysis of Organic Substances

G-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12156

mixture is allowed to stand for 30 minutes in a sealed vessel. Thereafter 2 g KI are added and after 5 minutes the I_2 is titrated with 0.1 N solution $Na_2S_2O_3$ in the presence of starch (to determine the amount of dichloroaniline formed from I and III) (S_2). Amount of dichloroaniline formed from II is $S_1 - S \cdot 25/100 - S_2$, hence the content of II in the mixture is: (in %) $S_1 \cdot 100 / S \cdot 100/25$. Since the content of I in the mixture is known from the solidification point the content of III can be calculated as the difference. Error in determination of each inomer is 1% of the sum of isomers. The described procedure has been checked with compounded mixtures.

Card 3/3

SOV/ 79-28-6-47/63

AUTHORS: Spryskov, A. A., Yerykalov, Yu. G.

TITLE: On the Orientation of the Substitution in the Aromatic Series
(K oriyentatsii pri zameshchenii v aromaticheskom ryadu) III.
The Isomerization of Dichlorobenzenes (III. Izomerizatsiya
dikhlorobenzolov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6,
pp. 1637 - 1642 (USSR)

ABSTRACT: The aim of the present paper is to investigate the isomerization of dichlorobenzenes and to obtain states of equilibrium among the isomers on various conditions. Proceeding from any dichlorobenzene a state of equilibrium among the isomers was obtained on its heating with aluminum chloride at 160°. In the equilibrium mixture were 16% ortho-, 30% para- and 54% meta isomers found. The velocity of the isomerization process depends on the amount of aluminum chloride. Besides this isomerization also a disproportioning takes place which in the experiments, on a heating up to 160° for 50 hours, yielded about 1,6% monochlorobenzene and up to 2,8% of a resinous product. The results of the experiments tend to show that on the heating with aluminum chloride a dehalogenation of dichlorobenzene takes place under the formation of monochlorobenzene as well as a formation of chlorine. The latter chlorinates monochlorobenzene and forms a mixture of dichloro-substituted products.

Card 1/2

On the Orientation of the Substitution in the Aromatic Series. III. The Isomerization of Dichlorobenzenes

SOV 79-28-6-47/63

The process of dehalogenation is represented by the given scheme. Hydrogen chloride forms in this system by conversion of aluminum chloride with a small amount of air humidity. Thus this chlorination reaction in the presence of a catalyst is reversible. However, the velocity of the counterreaction at low temperatures is so low that the halogenation reaction can practically not be reversed. With increased temperature also the velocity of the reversible conversion increases. It becomes an isomerization and it becomes possible to obtain a state of equilibrium. There are 1 figure, 4 tables and 11 references, 4 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskii institut (Ivanovo Chemical-Technological Institute)

SUBMITTED: May 11, 1957

1. Chlorobenzenes--Isomerism

Card 2/2

5(3)

AUTHORS: Spryskov, A. A., Yerykalov, Yu. G.

SOV/79-29-6-79/81

TITLE: On the Orientation in the Substitution of the Aromatic Series

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8,
pp 2798 - 2803 (USSR)

ABSTRACT: The authors carried out earlier (Ref 1) a number of experiments concerning the isomerization of dichlorobenzenes at 120° and 160°. At 160° a state close to the balance between the isomers was reached and the composition of the mixture in the state of equilibrium was found. However, the balanced state could not be achieved at 120°. In the present paper the further attempts at isomerization at 120° are described, the results of the isomerization experiments at 100 and 180° and of the experiments in which hydrogen chloride was introduced into the reaction mixture are discussed. An investigation was made of the isomerization of the o-, m- and p-dichlorobenzenes at 120 and 180° in the presence of aluminum chloride. In order to achieve the equilibrium between the isomers at 120° many more than 1000 hours are needed. The mixture which is in a state of equilibrium contains 12% o-isomer, 33% p-isomer, and 53% m-isomer. At 180° a state close to equilibrium is

Card 1/2

On the Orientation in the Substitution of the
Aromatic Series

SOV/79-29-8-79/81

reached after 20 hours no matter from which isomer one had started. It was found that the isomerization rate decreases at the introduction of hydrogen chloride into the reaction vessel in proportion to the quantity introduced. The removal of small quantities of HCl from the system also reduces the rate of isomerization according to the reaction mechanism previously suggested (Ref 1). From the experimental data the constants of the isomerization rate of dichlorobenzenes at 160° were computed. More on this computation is found on page 2801. The retarding effect of large amounts of hydrogen chloride on the isomerization may be explained according to the scheme given in the experimental part. There are 1 figure, 3 tables and 3 Soviet references.

ASSOCIATION: Ivanovskiy khimiko-tehnologicheskii institut (Ivanovo Chemical-technological Institute)

SUBMITTED: June 20, 1958

Card 2/2

SPRYSKOV, A.A.; YERYKALOV, Yu.G.

Orientation in substitution in the aromatic series. Part 7: Catalysts
of the isomerization of dichlorobenzenes. Zhur. ob. khim. 31 no.1:
292-296 Ja '61. (MIRA 14:1)

1. Ivanovskiy khimiko-tekhnologicheskii institut.
(Benzene) (Isomerization)

YERYKALOV, Yu.G.; SPRYSKOV, A.A.

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36

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Card 1/2

Clinic of Faculty Therapy, Military Medical Academy in Kiev

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